AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application.

Claims 1-67 are canceled.

68. (Currently Amended) A system ~~An in vivo sensor device~~ comprising:

~~(a)~~ an in vivo sensor device comprising a plurality of structural elements defining the in-vivo sensor device, the plurality of structural elements being composed of a first material, the first material having at least one of a first transition temperature and a first transition coefficient, at least one region of the plurality of structural elements being composed of a second material, the second material having at least one of a second transition temperature and a second transition coefficient higher than the at least one of the first transition temperature and the first transition coefficient, the second material and the first material being selected so that at least one of a geometry and a conformation of the in vivo sensor device changes upon application of at least one of an internal force and an external force to the in vivo sensor device; and

a detection mechanism configured to measure the at least one of a geometry and conformation change of the in vivo sensor device.

69. (Currently Amended) The system of ~~in vivo sensor as defined in~~ claim 68, wherein the first material comprises at least one of a shape memory material, a superelastic material, a plastically deformable material, an elastically deformable material, a stainless steel and a nickel-titanium alloy.

70. (Currently Amended) The system of ~~in vivo sensor as defined in~~ claim 68, wherein the second material comprises at least one of a shape memory material and a superelastic material,

71. (Currently Amended) The system of ~~in vivo sensor as defined in~~ claim 68, ~~and~~ wherein the second material has a martensite transition temperature that is higher than a martensite transition temperature of the first material.

72. (New) The system of claim 68, wherein the in vivo sensor is configured to measure at least one physiological condition.

73. (New) The system of claim 72, wherein the physiological condition is fluid flow rate.

74. (New) The sensor system of claim 72, wherein the physiological condition is temperature.

75. (New) The sensor system of claim 72, wherein the physiological condition is plaque.

76. (New) The sensor system of claim 72, wherein the physiological condition is an electrochemical change.